

Proposition 50

Category A

Statewide Rebate Program for Cooling Tower Conductivity Controllers

January 11, 2005



Submitted By:
**California Urban Water
Conservation Council**

2004 Water Use Efficiency Proposal Solicitation Package
Proposal Part One:
Project Information Form

Applying for (select one):

1. (Section A) Urban or Agricultural Water Use Efficiency Implementation Project

- Urban Agricultural
 (a) implementation of Urban Best Management Practice: # 9 Commercial/Industrial/Institutional
 (b) implementation of Agricultural Efficient Water Management Practice, # _____
 (c) implementation of other projects to meet California Bay-Delta Program objectives, Targeted Benefit # or Quantifiable Objective #, if applicable _____

2. (Section B) Urban or Agricultural Research and Development; Feasibility Studies, Pilot, or Demonstration Projects; Training, Education or Public Information; Technical Assistance

- (d) Specify other: _____
 (e) research and development, feasibility studies, pilot, or demonstration projects
 (f) training, education or public information programs with statewide application
 (g) technical assistance
 (h) other

3. Principal applicant (Organization or affiliation)

California Urban Water Conservation Council

4. Project Title:

Statewide Rebate Program for Cooling Tower Conductivity Controllers

5. Person authorized to sign and submit proposal and contract

Name, title Mary Ann Dickinson
Mailing address 455 Capitol Mall, #703
 Sacramento, CA 95814
Telephone 916-552-5885
Fax 916-552-5877
E-mail maryann@cuwcc.org

6. Contact person (if different):

Name, title _____
Mailing address _____

Telephone _____
Fax _____
E-mail _____

7. Funds requested (dollar amount) (from Table C-8, column II)

\$2,183,036

2004 Water Use Efficiency Proposal Solicitation Package
Proposal Part One:
Project Information Form (continued)

8. Applicant funds pledged (dollar amount): \$3,780,187

9. Total project costs (dollar amount (from Table C-1, column II, row I) \$5,963,223

10. Is your project locally cost effective? (a) yes

Locally cost effective means that the benefits to an entity (in dollar terms) of implementing a program exceed the costs of that program within the boundaries of that entity. (b) no

(If yes, provide information that the project in addition to Bay-Delta benefit meets one of the following conditions: broad transferable benefits, overcome implementation barriers, or accelerate implementation.)

11. Is your project required by regulation, law or contract? If no, your project is eligible. (a) yes (b) no

If yes, the project is eligible if it is not currently required? Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.

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Proposal Part One:
Project Information Form (continued)

12. Duration of project (month/year to month/year): 10/05 to 12/08
13. State Assembly District where the project is to be conducted: Statewide
14. State Senate District where the project is to be conducted: Statewide
15. Congressional district(s) where the project is to be conducted: Statewide
16. County where the project is to be conducted: Statewide
17. Location of project (longitude and latitude) Statewide
18. How many service connections in your service area (urban)? Statewide
19. How many acre-feet of water per year does your agency serve? Statewide
20. Type of applicant (select one):
- (a) City
 - (b) County
 - (c) City and County
 - (d) Joint Powers Authority
 - (e) Public Water District
 - (f) Tribe
 - (g) Non Profit Organization
 - (h) University, College
 - (i) State Agency
 - (j) Federal Agency
 - (k) Other
 - (i) Investor-Owned Utility
 - (ii) Incorporated Mutual Water Co.
 - (iii) Specify _____

2004 Water Use Efficiency Proposal Solicitation Package
Proposal Part One:
Project Information Form (continued)

21. Is applicant a disadvantaged community? If 'yes' include annual median household income.
- (a) yes, _____ median household income
 (b) no

However, the proposal will also serve water supply agencies in disadvantaged communities.

(Provide supporting documentation.)

**2004 Water Use Efficiency Proposal Solicitation Package
Proposal Part One:**

Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form has the legal authority to submit the proposal on behalf of the applicant;

There is no pending litigation that may impact the financial condition of the applicant or its ability to complete the proposed project;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant;

The applicant will comply with all terms and conditions identified in this PSP if selected for funding; and

The applicant has legal authority to enter into a contract with the State.

Signature

Mary Ann Dickinson

Executive Director

Name and title

January 11, 2005

Date

Executive Summary

Cooling towers are equipment that use water to regulate air temperature in a commercial, industrial, or institutional facility, either by rejecting heat from air conditioning systems or by cooling hot equipment. These cooling towers, which exist by the thousands throughout the state, represent a huge potential for water savings.

More than 75% of cooling towers do not have controls to properly manage the bleed water. Bleed water is a means to remove concentrations of minerals that build up in the water due to evaporation. If the concentration of Total Dissolved Solids (TDS) and minerals in the water reaches high levels, the cooling tower system will fail due to scale build-up.

The amount of bleed is set manually, and always errs towards adding more fresh water than needed. Typically, a cooling tower is designed to allow Cycles of Concentration to reach a level of 5 or greater. Manually controlled cooling towers usually reach a cycle of concentration level of only 1.5. This results in more than 2,000 gallons of water wasted per day by the typical cooling tower on a typical day.

Conductivity controllers are electronic devices that measure the level of minerals in the water (through conductivity), and automatically adjust the bleed level according to current conditions. As the TDS of the input water from local water supplier varies, the controllers automatically adjust the exchange rate of water input and bleed. As the load of the cooling tower changes hourly due to weather conditions or cooling load, the controller automatically adjusts the water usage as necessary. Because the variables change hourly, it is impossible to properly and efficiently manage cooling tower water use without a controller.

Most new conductivity controllers also include a chemical feed pump to add biocides and rust inhibitors to the make-up water. There are some sites that benefit from a weak acid introduction to maintain proper pH levels. Lowering pH levels allows greater concentration of TDS before precipitation and scaling occurs; thus higher cycles of concentration which result in lower water consumption. Where conditions warrant acid feed to control scale, this program would offer incentives to include such device at a minimal additional cost to the program.

California water agencies have made little advancement with programs to upgrade cooling towers to use water efficiently. Many agencies have conducted water use surveys on their commercial customers and have found great savings potential in retrofitting cooling towers. The Council has offered training classes for water conservation coordinators to help them understand this important water savings opportunity under BMP 9.

However, despite short payback periods, agency efforts to get controllers installed are thwarted by the way the cooling towers are managed by the customers. Most facilities

contract out cooling tower maintenance to service vendors. These vendors are under one-year contracts at fixed rates; therefore, these vendors do not have a financial incentive to use water efficiently, and managing controllers would add costs to their service.

As a result, efforts by water agencies to promote the use of controllers are usually dismissed by the vendor servicing the cooling tower customer. It has become apparent through prior conservation program experience that the cooling tower service members must be part of the program to achieve success in a water conservation program.

This proposed program includes the cooling tower service vendors as the marketing arm to convince their own clients (the cooling tower owners) to upgrade the cooling towers with controllers, and then to manage the controllers as a tool to efficiently use water in the cooling system. In this project the Council would work closely with the vendors, and the vendors will receive financial incentives to install and properly maintain the controllers. By vendors converting their own clients to using controllers, we market through an established relationship between vendor and client, and we avoid the delay in cooling tower owners having to switch vendors to participate in the program.

The program is proposing rebates which would be paid based on capacity of cooling tower (measured in "tons") and the cost to retrofit. Registered vendors that have attended program training would be allowed to have the incentives paid directly to them (with the cooling tower owner's permission). As part of the eligibility requirements, a dedicated water meter will also be attached to the cooling tower for monitoring and assessment.

A statewide initiative allows us to gain the support and marketing network of large chain cooling tower service vendors. DWR and water agencies would also benefit from the economies of a high volume program. Small and medium size water agencies that cannot afford the overhead cost of operating a program will be able to promote water efficiency at minimal cost.

This program is designed to spur the marketplace and promote continued cooling tower retrofits far beyond the grant funding available. The economic advantage of using controllers to manage water use in cooling towers already exists, yet market share is minimal due to the barriers mentioned above. Once the cooling tower owners and vendors become accustomed to installing and using controllers, it is anticipated the market will continue to grow beyond this program scope. While the Council only projects water savings for the cooling towers retrofitted in this program, the actual water savings achieved by changing the marketplace will be many times greater and the impact will be realized for decades to come.

Program Overview

<p>Product</p>	<ul style="list-style-type: none"> ▶ Install conductivity controllers on cooling towers ▶ Increase Cycles of Concentration from 1.5 to 5 ▶ Install pH controllers (alkalinity) where needed
<p>Market</p>	<ul style="list-style-type: none"> ▶ Facilities with cooling towers, including office buildings, hospital, schools, institutions, departments stores, grocery stores, etc. ▶ Minimum 50 ton cooling capacity ▶ Target high use customers
<p>Geographic Coverage</p>	<ul style="list-style-type: none"> ▶ State-wide ▶ Market emphasis in Bay Delta Areas ▶ Participating water supplier service territories
<p>Production Goals</p>	<ul style="list-style-type: none"> ▶ 700 total retrofits over 3 years ▶ 500 retrofits completed by end of Year 2, to allow for an additional year of monitoring and assessment. ▶ 10,030 acre-feet of water conserved over ten year period ▶ Verified savings data from various climate zones and wide variety of applications (food processing, cold storage, space conditioning, etc.)

<p>Market Outreach</p>	<ul style="list-style-type: none"> ▶ Cooling Tower maintenance vendors licensed by the State of California ▶ Trade Ally networking ▶ Facility Managers ▶ Water Supplier outreach; direct-mail, phone contact, CII water surveys, bill stuffers, etc. ▶ Rebate amount: \$2,319
<p>Projected Water Savings</p>	<ul style="list-style-type: none"> ▶ 2,000 gallon per day per cooling tower (average) ▶ Total 10,030 Acre Feet saved over 10 years (includes 10% annual savings decay rate)
<p>Program Costs</p>	<ul style="list-style-type: none"> ▶ Total = \$595/AF ▶ Applicant Cost = \$377/AF (63%) ▶ State Cost = \$218/AF (37%)

Statement of Work One: Relevance and Importance

Over the past twenty years, the water suppliers have achieved millions of acre-feet of residential water savings through the retrofit of ultra-low-flush toilets and other indoor plumbing programs. Similar water conservation gains have eluded water agencies with their Commercial, Institutional and Industrial (CII) customers. There is vast untapped water conservation potential in these market segments. BMP #9 of the Memorandum of Understanding (signed by more than 180 water agencies) sets the implementation goals for water conservation in the commercial, industrial, and institutional (CII) sector. However, to date water agencies have had little success in achieving the goals of BMP #9.

Cooling towers represent a common end use among the larger customers in the CII segment. There are more than 20,000 cooling towers in the state that do not have conductivity controllers. Many large buildings even have multiple cooling towers to serve the cooling needs of the building. This represents more than 40 million gallons of water per day wasted. The solution of using conductivity controllers is simple and cost-effective. The technology has been available for many years, yet market barriers have stymied implementation.

The goals of the program are:

- a) Retrofit 700 cooling towers with conductivity controllers.
- b) Conserve more than 10,000 AF of water in the next ten years.
- c) Monitor and verify the water conservation effects of controllers in different climate zones and customer classifications.
- d) Establish experience and technical expertise among water conservation personnel of water agencies.
- e) Change the marketplace so conductivity controllers become the standard method of properly maintaining cooling towers.

Overcoming Barriers To Conservation

There are many reasons why the CII market has not made water efficiency gains similar to the residential market, especially in the water waste of cooling towers. We have itemized the major ones below:

1. Water Conservation personnel are less familiar with the end water uses and potential water conservation technologies.

2. Small and medium size water agencies do not have enough CII customers to offset the overhead costs of establishing and maintaining CII conservation programs.
3. Water conservation opportunities are significant; yet wasted water represents a relatively small cost to most CII customers. Because the cooling tower is not separately metered, the water bill payer does not know the significance of the water used and wasted by the cooling tower alone.
4. The financial capital needed to upgrade or retrofit the cooling tower is not available for the customer, despite excellent return on investment.
5. The cooling tower maintenance vendor usually controls the water use of the cooling tower. Extra water use often reduces the risk and workload of the maintenance vendor.
6. Water agency personnel do not have an established relationship with the person of authority at the CII site.
7. Cooling tower maintenance is usually contracted to a vendor in 12-month cycles (based on lowest bid), preventing facility managers from opting to a more efficient system in an expedient manner.

The Council proposes a program to address and overcome the obstacles outlined above:

- a) The Council will establish a turn-key operation center with the technical resources and personnel required to operate this program. Minimal technical expertise will be needed by the water agencies. The Council will conduct training workshops for the personnel of agencies choosing to participate. The agencies will only need to commit the cost share and staff time to establish the service in their area. The Council will maintain the necessary technical expertise and assistance throughout the term of the program. It is expected the water agencies will gain the expertise and experience during the program to continue in the efforts long after this program concludes.
- b) Small and medium size water agencies will garner the benefits of economies of scale. Each participating agency will share in only a small portion of the costs of overhead and maintaining the program. This collective program allows many agencies to enter the CII water conservation market for the very first time.
- c) The Council proposes to install a dedicated water meter for the water supply to the cooling tower. This meter installation serves three purposes. The meter allows the Council to monitor and assess the effectiveness of the retrofit. The consumption records will allow the council to detect if the cooling tower controller has been bypassed. The consumption records allow the water agency to demonstrate, to the customer, the significant amount of water used by the cooling tower.

- d) The grant funding along with the applicant's share will usually cover 100% of the cost to retrofit. Our proposed program allows the retrofit to be performed with virtually no capital cost to the CII customer. This eliminates the need for the facility manager to request funds from the owner in "next year's budget". The facility manager can agree to participate without the need to get approval for unbudgeted capital improvements.
- e) Cooling tower controllers reduce the risk for the maintenance vendor because the bleed adjustments are made automatically as local conditions change. The controller removes the risk the maintenance vendor assumed when input water quality changes suddenly and without notice. Manual bleeds are usually set for worst-case scenario, even if this scenario only occurs one or two weeks of the year. An analogy is setting an irrigation controller for a typical week in July, and irrigating according to July Et requirements – 12 months a year. The cooling tower controller automatically adjusts the water requirements every 15 minutes. Before maintenance vendors participate in the program, they will be required to attend workshops conducted by the Council. Vendors will be required to sign an agreement with the Council to abide by the goals of the program. The vendor will agree to maintain the system and cooling tower controller for maximum water efficiency, while protecting the cooling system from scale build-up. Water agency personnel will conduct periodic inspections to verify the controllers are properly set and water efficiency is maintained.
- f) Large state wide and nation-wide firms maintain most cooling towers, especially large facilities. These firms often are knowledgeable and have the expertise in installing and maintaining conductivity controllers. In fact, most have at least a few customers using conductivity controllers, while the majority of their customers have chosen to retain the manual bleed system. Our marketing plan is centered on the concept of encouraging these cooling tower maintenance firms to convert their existing customers to conductivity controllers. This allows firms with already established relationships and trust with the facility manager to sell the concept of controllers to their customers. The facility manager can participate in the program without changing vendors.
- g) Because the facility's existing vendor is marketing the program, the facility manager no longer has to wait for the current vendor's contract expiration before participating in the program.

In summary, the barriers preventing water efficiency by cooling towers is not a technology issue. The Council has analyzed the pertinent issues, and designed a program that addresses the needs of all parties affecting the implementation: The program solves the issues for the water agency, the facility manager and the cooling tower maintenance vendor, while significantly reducing the water drawn from the Bay Delta. While the program is to be implemented over three years, we anticipate the total water conservation effect to increase in subsequent years as the marketplace is transformed.

Statement of Work Two: Technical/Scientific Merit, Feasibility

The **Statewide Rebate Program for Cooling Tower Conductivity Controllers** will offer incentives to install and maintain conductivity controllers (and pH controllers where needed) on an existing cooling tower where no controller currently exists. The rebate is to be payable to the cooling tower owner or the installation/maintenance vendor. The savings potential of this program has been verified by pilot programs operated by Metropolitan Water District of Southern California and Los Angeles Water and Power Department.

The first phase of the program is coordinating with participating water agencies to finalize rebate allotments, based on grant award and water agency needs. The Council will agree to terms with the water agencies, specifying the responsibilities and expectations of all parties.

The Council will finalize the scope of work and prepare bid specifications for the administration and data processing of the financial incentives. The Council reserves the right to enter into service contracts for some portions of the work, including rebate administration, rebates processing, and project assessment to firms that have expertise in this work.

Cooling tower maintenance vendors working in service territories of participating water agencies will be identified. Vendors will be contacted and offered participation in the program. Vendors that choose to participate will be to sign an agreement, outlining the terms and conditions of the project. Only vendors that sign the agreement will be eligible to have incentive payments sent directly to the vendor.

Product specifications and minimum requirements will be finalized to reflect any new technological advancement made between now and the time of grant award. At this time, we propose the following specifications:

Combination Conductivity Controller & Chemical Feed Pump In One Unit.

Microprocessor Controlled
Conductivity Control With Selectable Feed Timers
Chemical Feed Pump Output – Pump Capacity From 6 GPD Maximum -30 GPD
Maximum at 110-250 PSI
Flow Switch – Optional
Voltage – 110 (Standard) – 220 Volt (If Needed)
Head Material – Polypropelene (Standard) – Kynar (If Needed)
California Urban Water Conservation Council
Seat Material – Viton (Standard) – Teflon (If Needed)
Check Ball – Ceramic (Standard) – Stainless (If Needed)
Connections – 1/4” Or 3/8” Tubing Standard
Display – Minimum 16 Character LCD Backlit
Stroke Length – Manual Or Digital Adjustment
Speed Frequency – 1 To 7500 Strokes/Hour Minimum Range – Wider Range Is Optional

Conductivity Scale - 0-5,000/6,000 Micromhos/cm Minimum Range
Enclosure – Heavy Duty NEMA 4X Type High Impact Thermoplastic Or Equivalent
Environment – Ambient Temperature – 32-140 Degrees F
Relative Humidity – 0-100%
Electrode – Combination Conductivity And Temperature

Conductivity Controller Only

Digital Or Analog
Conductivity Control With Selectable Feed Timers
Flow Switch – Optional
Voltage – 110 (Standard) – 220 Volt (If Needed)
Display – Analog Or Minimum 16 Character LCD Backlit
Conductivity Scale – 0-5,000/6,000 Micromhos/cm Standard Range – Additional Ranges Optional
Enclosure – Heavy Duty NEMA 4X Type High Impact Thermoplastic Or Equivalent
Environment – Ambient Temperature – 32-140 Degrees F
Relative Humidity – 0-100%
Electrode – Combination Conductivity And Temperature

Solenoid Valve

Diaphragm Or Ball Type
0 PSI Differential Pressure
Voltage – 110 (Standard) – 220 Volt (If Needed)
Typical Line Size – ½" -1 ½ Inch
Maximum Fluid Temperature – 150 Degrees F

Product manufacturers will be contacted to determine products that meet the specifications. Currently there are five different manufacturers that offer controllers that would comply. An approved products list will be developed and maintained as part of the verification process. The list will be updated as new products become available.

Marketing and participation will occur in the following steps:

1. Cooling tower maintenance vendors will contact their current customers, not currently using conductivity controllers, and offer to have the customer participate.
2. Vendors will forward to the Council the name and address of customers that agree to participate.
3. The Council will verify the water agency serving the customer is participating in the program. If so, the Council will obtain the account information of the customer.
4. Water agency staff will conduct a pre-inspection of the facility and cooling tower. The following data will be determined and/or verified: no pre-existing controller is

installed, size of the cooling tower (cooling capacity in tons), owner name, facility contact person, type of operation (space cooling, equipment cooling, etc.), climate zone, type size and quantity of controller recommended, etc. This data will be forwarded to the Council's program administrator.

5. The program administrator will determine the value of the financial incentive eligible for the project, based on cooling capacity, not to exceed total cost of the installation.
6. A rebate application is prepared with all customer and vendor information, including the value of the rebate offered. Rebate application is then sent to the vendor.
7. The vendor and facility owner sign the application, agreeing to the terms of the program.
8. The vendor installs the controller and dedicated water meter (meter provided by the water supply agency), and sends the application with receipt to the program administrator.
9. The program administrator contacts the water agency to request a post-installation inspection.
10. Water agency staff inspect the site and verify that all equipment is installed as prescribed.
11. As part of the regular monthly service call of the vendor, the vendor records meter readings and controller settings to program administrator for at least 12 months after installation.
12. As part of monitoring, water agency staff also inspect and record meter reads and controller settings on bi-monthly or quarterly basis for 24 months after installation.

Administration

The Council has significant knowledge in program design and execution of statewide water efficiency programs. The *Rinse & Save Pre-rinse Spray Valve Program for Restaurants* has been operated successfully since 2002 and is now in its second phase of funding from the California Public Utilities Commission. 16,896 pre-rinse spray valves have been directly installed in food service establishments throughout the state in the first phase of the program. The Council will be installing another 24,700 valves in the current second phase. This extended, successful experience with a statewide program has given us program management experience; in addition, the Council's

Executive Director has years of experience managing statewide conservation programs in another state.

Through this combined experience we have learned that a successful program is one with streamlined procedures -- procedures designed to be simple for the customer to grasp and free from complicated requirements on the user end. We have also learned that standardizing the marketing materials into one statewide format reduces the confusion across water supplier boundaries, where one water supplier's materials may differ from a neighboring water supplier, thereby causing confusion to the media, the nurseries and the customer. A statewide program can provide a single message and reduce that confusion.

The first step in the program process is administrative in nature. The Council will allocate program personnel and prepare a scope of work for administration and rebate processing. The Council will then issue a competitive Request for Proposals with experienced firms and enter into formal agreements with the selected implementation firm. The program administrator will begin by establishing the program office, and develop data tracking and processing system.

Below is a listing of administrative tasks required and the deliverable date for each:

Administrative Task List and Schedule

	<i>Due Date</i>
Assign program management, technical support, administrative and accounting activities to internal CUWCC staff or existing contractors	October 2005
Draft water agency agreement	October 2005
Obtain authorized agreement from participating water agencies	December 2005
Draft scope of work for statewide contractor	December 2005
Draft RFP for statewide contractor	December 2005
Mail RFP to CUWCC list of service vendors	January 2006
Evaluate RFPs	January 2006
Interview top candidates	January 2006
Select vendor	January 2006
Negotiate contract with vendor	February 2006
Vendor to assign management and supervisor staff	February 2006
Draft general procedures	February 2006
Draft application and program guidelines including water budgets	February 2006
Recruit and train administrative and customer service staff	March 2006
Toll free phone number established	March 2006
Program office staffed and opened	March 2006

Quality Assurance

Because of the large amount of funding to be managed in this program, it is important to maintain a high level of quality assurance and program integrity. Quality assurance is required for two major aspects of the program:

1. *Ensure that the vendor provides a high level of customer services and their work product is delivered on-time, complete and with accuracy.*
2. *Confirm that customer follows all program requirements and there is no fraudulent activity.*

This will be controlled through many means included but not limited to:

- Professional training would be conducted for field and office staff, water agency staff, and cooling tower maintenance vendors;

- Feedback from customer surveys, quality assurance results and monitoring and assessment would be incorporated into on-going training;
- Electronic tracking and response to all customer inquiries and complaints within 24 hours would be required of the service vendor;
- Random re-inspections would be conducted;
- Customers would be provided with written requirements and contract;
- Customers must sign acknowledgement of requirements; and
- 100% of all paperwork and data entry will be quality checked.

Statement of Work Three: Monitoring and Assessment

Data Tracking and Reporting

The Council understands that DWR requires clear and concise reporting. Our reporting will be submitted on time and with the appropriate level of detail on program progress, customer participation, incentives generated, and estimated water savings. We have provided similar quarterly reports to the California Public Utilities Commission, which includes this same level of data detail in the Council's current Pre-Rinse Spray Valve Program.

Data Tracking and Reporting	Due Date
Draft tracking and reporting requirements	January 2006
Draft sample reports	February 2006
Generate program database	February – April 2006
Data enter customer records	May 2006 – Ongoing
Generate program reports	July 2006 – Ongoing

To ensure program and water savings data integrity, the Council will hire a third party independent monitoring and assessment consultant through an RFP process. The Council's field vendor will provide the consultant with all necessary data including customer records, field methodologies, customer fail rates and incentive amounts. All companies involved in the program will sign statements of confidentiality and a code of professional ethics. All monitoring and assessment conclusions will be provided to the Council and DWR.

An overview of the Monitoring and Assessment tasks and timeline are shown below:

Monitoring & Assessment Task List and Schedule

	<i>Due Date</i>
Draft scope of work	February 2006
Draft Monitoring & Assessment RFP	February 2006
Mail RFP to Council list of consultants	February 2006
Evaluate RFPs	March 2006
Interview top candidates	March 2006
Select vendor	March 2006
Negotiate contract with selected vendor	March 2006
Monitor and assess program activities	April 2006 <i>Ongoing</i>
Provide feedback to team regarding monitoring and assessment findings	May 2006 <i>Ongoing</i>
Generate annual report	July 2007
Generate final report	July 2009

Qualifications of the Applicant

The California Urban Water Conservation Council, as the lead agency, will provide program management, including all reporting functions. The team assembled for this program is highly experienced in the design and implementation of water efficiency programs. The specialists who have planned and will implement this program have water conservation experience with the following:

- Cooling tower operations
- Rebate processing
- Trade ally marketing
- Residential and commercial customers
- Measurement and evaluation

The California Urban Water Conservation Council is a non-profit organization composed of 328 member urban water supply agencies, environmental groups, and other entities. The organization's goal is to implement, or aid members in implementing, California water conservation best management practices and other conservation initiatives.

Executive Director, Mary Ann Dickinson

With over 16 years of conservation experience, Mary Ann Dickinson has a diverse background in water efficiency program design, implementation, marketing, and management. She has over 30 years of experience in project management. Her goal is to bring water efficiency to its highest possible level statewide by bringing new products to market as well as implementation of statewide retrofit programs. An example of her stewardship is the CUWCC Rinse and Save Program, operating since 2002. Under Mary Ann's watchful eye the Rinse and Save Program, a statewide spray valve retrofit program, has delivered 25,850 AF of savings to 20,000 customer sites.

Mary Ann is also involved in State water policy issues. She serves on the California Bulletin 160 State Water Plan Advisory Committee, and also serves on the California Bay-Delta Water Use Efficiency Subcommittee, where she has been an active participant working closely on programs and issues benefiting the Bay Delta watershed. In particular, the issue of landscape water efficiency has been flagged in these two forums as a clear example of the multiple benefits to the Bay Delta watershed.

Prior to joining the Council in January of 1999, Mary Ann was a Branch Manager for the Metropolitan Water District of Southern California, where she worked on planning, legislative, conservation, and community conservation programs since 1992.

From 1989 to 1992 served as Deputy Director for Public and Governmental Affairs at the South Central Connecticut Regional Water Authority. In that capacity she

coordinated state and local government activities and managed a statewide water conservation program involving 63 water utilities.

Mary Ann has a depth of experience as a resource manager, having worked at the Connecticut Department of Environmental Protection for 18 years as a coastal management regulator, planning specialist, and legislative lobbyist.

CUWCC Project Manager, Thomas Pape

Thomas Pape has been in the water and energy efficiency industry since 1979. He has had extensive experience as a private implementation contractor, and since 1997 has owned his own consulting firm. He has implemented more than 30 water and energy conservation projects for more than 75 clients throughout the world. His expertise includes residential, commercial, institutional and industrial sectors of the utility market. He has also served as the Council's technical Advisor for more than two years.

Thomas has a B.A. degree in Comprehensive Planning and Design. He has served on numerous professional committees including AWWA Conservation Division, AWWA Standards Council, IAPMO Technical Committee, and Association of Energy Engineers.

John Koeller, CUWCC Monitoring and Assessment Technical Consultant

John Koeller has been engaged as a consultant in the water and energy efficiency market since 1992. John, principal consultant with Koeller and Company, has more than 30 years of experience serving clients in both the public and private sectors. He has performed more than 230 technical assignments for a variety of clients, including Metropolitan Water District of Southern California, East Bay MUD, Municipal Water District of Orange County, SDG&E, Southern California Edison, Inland Empire Utilities Agency and Seattle Public Utilities.

John is currently a technical consultant to the Council handling an array of technical assignments including oversight of the measurement and verification (M&V) for the Rinse and Save Program. Overseeing the measurement and verification consultant, John was responsible for the technical viability of the M&V methodology and ensuring the validity of the savings numbers overall.

Hans-Erik Fuchs, Program Technical Supervisor

Hans-Erik Fuchs graduated from California State University Fullerton (CSUF) in 1976, with degrees in Business Administration, Marketing, and Chemistry. He began his career in 1977 with Calgon Corporation, the largest water treatment corporation in the world. Hans gained 23 years experience in water treatment, specializing in including water treatment for cooling systems.

In 1999, Hans formed his own water treatment consulting company (Water One) based in northern California. Water One specializes in upgrading cooling tower systems,

steam boilers, and closed loop systems. The company serves the entire territory of California Urban Water Conservation Council member water agencies.

Outreach, Community Involvement, and Acceptance

To bring this program to the public, many groups will have worked to make it a success.

- The program rebate contractor will hire from the local community to fill program positions.
- Numerous water agencies have already joined forces to deliver a more effective program to their customers. Each agency will organize their own marketing initiatives and reach out to the community at show events, handing out program information to CII customers. To show their strong interest and backing, the Council has included letters of support from the water agencies and environmental organizations listed in the Letter of Support appendix. All of these water suppliers and groups will work for the program, in varying degrees, to market the program, enlist participants and achieve our water savings goals.
- The Council will publish a report of the results of this project, and send copies of the report to water supply agencies in California as well as post the report on its website. For more information on how the Council communicates with its constituency, please visit its website at www.cuwcc.org.

Innovation

The innovative aspect of this program is not related to the measures selected, but instead to the statewide approach and utilizing trade allies to deliver rebate program services.

This program provides cost relief to the small to mid size agencies when compared to the price tag of operating the program on their own. With this program, even the smallest participating agency will be able to deliver a highly professional marketing message to their customers; accomplished without their having to hire new staff or lease new office space.

In particular, this program will address a critical need for improving CII water savings under BMP #9 by testing out a new distribution method (through cooling tower vendors) and a statewide rebate program for conductivity controllers.

Nothing improves market acceptance better than positive customer testimonials. If our program delivers the expected customer benefits and positive feedback, more water agencies throughout the state will take interest, crafting their own program designs or replicating this one.

Project Benefits

The multiple benefits of the Statewide Rebate Program for Cooling Tower Conductivity Controllers are as follows:

- **Will provide economies of scale through a statewide program.** By combining agencies into one statewide program, small and medium sized water suppliers will be able to participate, whereas they could not afford to do so on their own. This is particularly true for those water suppliers in hard-hit economically disadvantaged communities, where often the water supply constraints are tight as well.
- **Will capture savings from a formerly hard-to-reach customer.** This highly innovative initiative is designed to capture savings from a “problem market”. Cooling tower efficiency has exacerbated California water agencies for years, and this program may provide the first real key to gain entry into this market.
- **Will reduce peak demands.** Reduction of cooling tower water use provides the highest value savings: peak savings during the hot summer and fall months. By shaving the peak demand, we are delaying the costly need for system expansion and capital investments.
- **Will reduce water use overall.** Reduction of cooling tower water use will also reduce demand overall. This program expects to save 10,030 acre-feet -- a significant demand reduction that will not need Bay-Delta supplies.
- **Will provide multiple benefits to the Bay-Delta region.** Water savings provide relief and multiple benefits to the overextended Bay-Delta region in several ways. First, demand for water from the Delta will be reduced in peak summer and fall months when flow through the Delta is lowest. Second, if more flow is left in the Delta because of reduced peak demands for water, that flow can benefit fisheries and other aquatic species. Finally, reduced landscape irrigation means reducing excessive growth of turf which gets mowed and contributes to the “green waste” solid waste load within the Bay-Delta watershed.

Statewide Rebate Program for Cooling Tower Conductivity Controllers

	Water Agency Staff	CUWCC Staff	Tech Support	Proj. Mgr	Director	Consultant	Customer Rebates	Other Expenses		Subtotal	39% Admin	Project Total	Applicant Cost Share	DWR Cost Total
Administration Initial														
Salaries	828,000	90,000	30,000	210,000	90,000			60,000		1,308,000	510,120	1,818,120	1,323,060	495,060
Fringe Benefits	372,600	40,500	13,500	94,500	40,500			27,000		588,600	229,554	818,154	595,377	222,777
Supplies								27,000		27,000	10,530	37,530	18,765	18,765
Equipment											0	0	0	0
										Subtotal	750,204	2,673,804	1,937,202	736,602
Consulting Services & Processing														
Service Fees						294,000				294,000		294,000	147,000	147,000
Per Rebate Fee						477,750				477,750		477,750	238,875	238,875
										Subtotal	0	771,750	385,875	385,875
Equipment														
Water Meters						245,000				245,000	95,550	340,550	340,550	0
										Subtotal	95,550	340,550	340,550	0
Travel														
Travel			14,400	28,800	14,400					57,600	22,464	80,064	40,032	40,032
										Subtotal	22,464	80,064	40,032	40,032
Rebates														
Average \$2,319/CT							1,623,300			1,623,300		1,623,300	811,650	811,650
										Subtotal	0	1,623,300	811,650	811,650
Materials Installation														
Meter Installs						122,500				122,500	47,775	170,275	85,138	85,138
										Subtotal	47,775	170,275	85,138	85,138
Implement Verification														
Pre and Post Inspections						56,000				56,000		56,000	56,000	0
										Subtotal	0	56,000	56,000	0
Monitoring and Assessment														
Reporting (Contract Management)						203,000				203,000		203,000	101,500	101,500
						32,000				32,000	12,480	44,480	22,240	22,240
										Subtotal	12,480	247,480	123,740	123,740
Grand Totals	1,200,600	130,500	57,900	333,300	144,900	1,430,250	1,623,300	114,000	Grand Total	5,034,750	928,473	5,963,223	3,780,187	2,183,037
Conserved Water (10 years)	10,030	Acre-Feet											63%	37%
													CUWCC cost/AF	\$377
													DWR cost/AF	\$218
													Total cost/AF	\$595

**Statewide Rebate Program for Cooling Tower Conductivity Controllers
Schedule**

Project	Budget	Year 1				Year 1	Year 2				Year 2	Year 3				Year 3	Total
		Q1	Q2	Q3	Q4	Subtotal	Q1	Q2	Q3	Q4	Subtotal	Q1	Q2	Q3	Q4	Subtotal	
Administration Initial																	\$0
Salaries	\$495,060	\$41,255	\$41,255	\$41,255	\$41,255	\$165,020	\$41,255	\$41,255	\$41,255	\$41,255	\$165,020	\$41,255	\$41,255	\$41,255	\$41,255	\$165,020	\$495,060
Fringe Benefits	\$222,777	\$18,565	\$18,565	\$18,565	\$18,565	\$74,259	\$18,565	\$18,565	\$18,565	\$18,565	\$74,259	\$18,565	\$18,565	\$18,565	\$18,565	\$74,259	\$222,777
Supplies	\$18,765	\$1,564	\$1,564	\$1,564	\$1,564	\$6,255	\$1,564	\$1,564	\$1,564	\$1,564	\$6,255	\$1,564	\$1,564	\$1,564	\$1,564	\$6,255	\$18,765
Equipment	\$0																
Administration Initial	\$736,602																
Consulting Services & Processing																	
Service Fees	\$147,000	\$12,250	\$12,250	\$12,250	\$12,250	\$49,000	\$12,250	\$12,250	\$12,250	\$12,250	\$49,000	\$12,250	\$12,250	\$12,250	\$12,250	\$49,000	\$147,000
Per Rebate Fee	\$238,875	\$19,906	\$19,906	\$19,906	\$19,906	\$79,625	\$19,906	\$19,906	\$19,906	\$19,906	\$79,625	\$19,906	\$19,906	\$19,906	\$19,906	\$79,625	\$238,875
Consulting Services & Processing	\$385,875																
Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Meters																	
Equipment	\$0																
Travel																	
Travel	\$40,032	\$3,336	\$3,336	\$3,336	\$3,336	\$13,344	\$3,336	\$3,336	\$3,336	\$3,336	\$13,344	\$3,336	\$3,336	\$3,336	\$3,336	\$13,344	\$40,032
Travel	\$40,032																
Rebates																	
	\$811,650	\$67,638	\$67,638	\$67,638	\$67,638	\$270,550	\$67,638	\$67,638	\$67,638	\$67,638	\$270,550	\$67,638	\$67,638	\$67,638	\$67,638	\$270,550	\$811,650
Rebates	\$811,650																
Materials Installation																	
Meter Installs	\$85,138	\$7,095	\$7,095	\$7,095	\$7,095	\$28,379	\$7,095	\$7,095	\$7,095	\$7,095	\$28,379	\$7,095	\$7,095	\$7,095	\$7,095	\$28,379	\$85,138
Materials Installation	\$85,138																
Implement Verification																	
Project Legal/License	\$0																
Implement Verification	\$0																
Monitoring and Assessment	\$101,500	\$8,458	\$8,458	\$8,458	\$8,458	\$33,833	\$8,458	\$8,458	\$8,458	\$8,458	\$33,833	\$8,458	\$8,458	\$8,458	\$8,458	\$33,833	\$101,500
Reporting (Contract Management)	\$22,240	\$1,853	\$1,853	\$1,853	\$1,853	\$7,413	\$1,853	\$1,853	\$1,853	\$1,853	\$7,413	\$1,853	\$1,853	\$1,853	\$1,853	\$7,413	\$22,240
Monitoring, Assessment & Reporting	\$123,740																
Total	\$2,183,037	\$5,189	\$5,189	\$5,189	\$5,189	\$27,679	\$5,189	\$5,189	\$5,189	\$5,189	\$27,679	\$5,189	\$5,189	\$5,189	\$5,189	\$27,679	\$2,183,037